

**Christine Silberhorn**  
Universität Paderborn

*Sum Frequency Generation For Quantum Applications*

In recent years sum frequency conversion processes have become an established tool to implement quantum information transfer interfaces between systems of different wavelengths. Such interfaces are essential for the realization of quantum networks, which combine different individual components with incompatible frequencies. In particular, long distance quantum communication, which uses stationary qubits with transitions in the visible or UV and flying qubits at telecommunication wavelengths rely on practical quantum frequency converters. Here, we present our work on the realization of sum frequency generation processes from telecommunication regime to visible and UV wavelengths and discuss cw and pulsed light characteristics.